

Serial No.: 10/540,110
Atty. Docket No.: P70551US0

IN THE SPECIFICATION:

For the purposes of line numbers referred to herein, lines of text as well as blank lines between paragraphs are counted. Accordingly, beginning the numbering with the first line of the text after the title, the third paragraph on page 1, for example, is designated herein as beginning at line 17 of the text as originally filed, the third paragraph on page 2 begins at line 22 of the text as originally filed, and so on.

On page 1, please delete all of the text appearing before the title of the invention.

On page 1, before line 1, please insert the following headings:

--BACKGROUND OF THE INVENTION

1. FIELD OF THE INVENTION--.

On page 1, line 4, please insert the following heading:

--2. DESCRIPTION OF THE RELATED ART--.

On page 4, line 5, please insert the following heading:

--SUMMARY OF THE INVENTION--.

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On page 4, please amend the third paragraph beginning on line 12, as follows:

--According to the teaching of this invention, this object is achieved by a method of determining a blood flow rate Q_F in a blood-carrying line that is coupled to an extracorporeal blood treatment device through an arterial line and a venous line. A portion of blood in the blood-carrying line is branched off at a first location through the arterial line and is returned to the blood-carrying line at a second location through the venous line such that this portion of blood passes from the arterial line to the extracorporeal blood treatment device and then to the venous line. The method includes the steps of determining a physicochemical variable Y of the blood, which is constant over a period of time for a measurement interval, in the arterial line upstream of the extracorporeal blood treatment device as having value Y_A and in the venous line downstream of the extracorporeal blood treatment device as having value Y_V; determining a net rate dx/dt of a variable X derived from the physicochemical variable Y into or out of the blood-carrying line during the measurement interval from the values Y_A and Y_V as a difference between rate dx_A/dt as measured in blood removed from the blood-carrying line

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through the arterial line and rate dX_v/dt as measured in blood supplied back to the blood-carrying line through the venous line; and using the net rate dX/dt to determine the blood flow rate Q_F in the blood-carrying line.

The invention also includes a device for measuring the blood flow in a blood-carrying line, the device comprising an arterial line branching off from the blood-carrying line through which blood is removed from the blood-carrying line; a venous line opening into the blood-carrying line through which blood is supplied to the blood-carrying line; arterial measurement means and venous measurement means for determining a physicochemical variable Y of the blood in the arterial line with the value Y_A and in the venous line with the value Y_V , these variables being constant over a period of time for a measurement interval; and an analyzer unit connected to the arterial measurement means and the venous measurement means which is configured to determine a net rate dX/dt of a variable X derived from the physicochemical variable Y into or from the blood-carrying line during the measurement interval as the difference between a rate dX_A/dt as measured in blood removed from the blood-carrying line through the arterial line and a rate dX_V/dt as measured in blood supplied back to the blood-carrying line through the venous line from the values Y_A and Y_V , the analyzer unit

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also being configured to use the net rate dx/dt to determine the blood flow rate Q_F in the blood-carrying line having the features of claim 1 and by a device having the features of claim 10. Advantageous embodiments of the invention are the object of the subclaims.

On page 4, line 30, insert the following heading:

--BRIEF DESCRIPTION OF THE DRAWINGS--.

On page 5, line 4, insert the following heading and paragraph following thereafter:

--DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

Further scope of applicability of the present invention will become apparent from the detailed description given hereinafter. However, it should be understood that the detailed description and specific examples, while indicating preferred embodiments of the invention, are given by way of illustration only, since various changes and modifications within the spirit and scope of the invention will become apparent to those skilled in the art from this detailed description.--.

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On page 14, after the last line, please insert the following paragraph:

--The invention being thus described, it will be apparent that the same may be varied in many ways. Such variations are not to be regarded as a departure from the spirit and scope of the invention, and all such modifications as would be recognized by one skilled in the art are intended to be included within the scope of the following claims.--.